What do I need to know for the upcoming Summative Assessment?

- Draw and label each type of transformation, including:
  - Translation
  - Reflection
  - Rotation (90°, 180°, and 270°)
  - Dilation
- Interpret each type of transformation with a given graph.
- Be prepared to explain each type of transformation and its affect on the original shape when translated, reflected, rotated, and/or dilated.

What are my resources to prepare?

- IXL (7th grade)
  - Q.1: Identify translations, reflections, and rotations
  - Q.2: Translations, graph the image
  - Q.3: Translations, find the coordinates
  - Q.4: Reflections, graph the image
  - Q.5: Reflections, find the coordinates
  - Q.6: Rotations, graph the image
  - Q.7: Rotations, find the coordinates
- IXL (8th grade)
  - R.8: Dilations, graph the image
  - R.9: Dilations, find the coordinates
- Class notes and practice
- Review homework
- Complete the practice problems on the following pages
- ASK for help BEFORE the assessment
# Transformations Overview

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<th>Movement</th>
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<td><strong>Translation</strong></td>
<td>The figure SLIDES from one position to another without turning. Every point of the original figure is moved the same distance and in the same direction.</td>
<td>To describe the translation using an ordered pair, add the coordinates of the ordered pair to the coordinates of the original points of the figure.</td>
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| **Reflection** | You FLIP the figure over a line of symmetry. The figures are mirror images of each other. Every corresponding point on the figure after a reflection is called its image. | - To reflect a point over the x-axis, use the same x-coordinate and change the y-coordinate to its opposite.  
  - To reflect a point over the y-axis, use the same y-coordinate and change the x-coordinate to its opposite. |
| **Rotation** | You TURN a figure around a fixed point called the center of rotation. | - To rotate a point 90° clockwise about the origin, switch positions of the x- and y-coordinates and change the y-coordinates to their opposites.  
  - To rotate a point 90° counterclockwise about the origin, switch position of the x- and y-coordinates and change the x-coordinates to their opposites.  
  - To rotate a point 180° about the origin, change the x- and y-coordinates to their opposites. |
| **Dilation** | You enlarge or reduce a figure by a SCALE FACTOR. The transformation changes the size of a figure, but not its shape. | Multiply the x- and y-coordinates of each vertex by the scale factor to get the dilated image coordinates. |
Directions: For 1-4 draw each transformation in a different color and state the vertices for the transformed shape.

1) Translate the figure with vertices $A(-4, 0), B(-6, -2), C(-5, -4), D(-3, -4), and E(-2, 2)$ by $(6, 4)$.

2) Rotate the figure with vertices $A(2, -3), B(1, -5), C(5, -5), and D(6, -3)$ $90^\circ$ counterclockwise and $180^\circ$.

3) Dilate the figure $A(-2, 3), B(-4, -2), C(4, -2), and D(2, 3)$ by 2 and $\frac{1}{2}$.

4) Reflect the figure $A(-4, -2), B(-3, -4), C(-5, -6), and D(-6, -3)$ over the $x-$ and $y-$axis.

Directions: For questions 5-8, describe the transformation that is shown, include translation coordinates, direction/degree of rotation, size of dilations, or axis of reflection.

5) Which transformation is shown?

6) Which transformation is shown?

7) Which transformation is shown?

8) Which transformation is shown?
1) A’(2, 4), B’(0, 2), C’(1, 0), D’(3, 0), E’(4, 6)
2) 90° counterclockwise: A’(3, 2), B’(5, 1), C’(5, 5), D’(3, 6);
   180°: A”(−2, 3), B”(−1, 5), C”(−5, 5), D”(−6, 3)
3) Dilate by 2: A’(−4, 6), B’(−8, −4), C’(8, −4), D’(4, 6)
   Dilate by ½: A”(−1, 1.5), B”(−2, −1), C”(2, −1), D”(1, 1.5)
4) Reflect over x-axis: A’(−4, 2), B’(−3, 4), C’(−5, 6), D’(−6, 3)
   Reflect over y-axis: A’(4, −2), B”(3, −4), C”(5, −6), D”(6, −3)
5) Reflection over the y-axis
6) Counterclockwise rotation of 90°
7) Dilate by 3
8) Translation of (8, 7)